

Appl. No. : 10/078,283  
Filed : 14-Feb-2002

### AMENDMENTS TO THE CLAIMS

A complete listing of all claims is presented below with insertions underlined (e.g., insertion), and deletions struckthrough or in double brackets (e.g., ~~deletion~~ or ~~[[deletion]]~~):

1. – 54. (Canceled)

55. (Currently Amended) A catheter for directing the flow of blood through a patient, said catheter comprising:

a catheter body having a proximal end, a distal end, a first lumen extending along a central longitudinal axis between said distal end and said proximal end adapted to fluidly communicate with the patient; and a second lumen extending between the proximal end and a location proximal of the distal end;

a redirecting tip positioned at the distal end, the redirecting tip comprising at least one outlet in a side of the first lumen and an internal flow redirecting surface extending from adjacent to ~~[[a]]~~the central longitudinal axis of the first lumen to a distal portion of the outlet, the redirecting surface having a curved profile extending between a proximal point ~~[[at]]~~adjacent to the central longitudinal axis and a distal point~~[[,]]~~ positioned ~~substantially axially away from the proximal point, the distal point defined by~~located at an apex that is located between the central longitudinal axis and the outlet, wherein the distal point is not positioned on the longitudinal axis, the redirecting surface being configured to redirect substantially all of the blood flow exiting said first lumen in a direction generally opposite of the direction of flow in the first lumen.

56. (Previously Presented) The catheter of Claim 55, wherein the flow redirecting surface comprises a three dimensional shape defined by rotating the curved profile about the central longitudinal axis.

57. (Currently Amended) The catheter of Claim 55, wherein the flow redirecting surface substantially prevents blood from flowing beyond the surface in the first lumen ~~in which the surface is positioned.~~

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58. (Currently Amended) The catheter of Claim 55, wherein the first lumen ~~in which the flow redirecting surface is positioned~~ has a closed distal end.

59. (Previously Presented) The catheter of Claim 55 wherein the redirecting tip comprises a distal end having a generally hemispherical shape.

60. (Previously Presented) The catheter of Claim 55, wherein the redirecting tip comprises a distal end having a generally parabolic profile.

61. (Currently Amended) The catheter of Claim 55, further comprising a plurality of outlets in the side of the first lumen ~~wherein the surface is located~~.

62. (Currently Amended) The catheter of Claim 61, where at least three outlets are provided in a side of the first lumen ~~wherein the surface is located~~.

63. (Previously Presented) The catheter of Claim 61, wherein the outlets have a generally rectangular shape.

64. (Previously Presented) The catheter of Claim 61, wherein a member extends between the catheter body and the redirecting tip between two adjacent outlets.

65. (Previously Presented) The catheter of Claim 55, wherein the cross-sectional profile of the redirecting surface is substantially parabolic.

66. (Previously Presented) The catheter of Claim 55, further comprising a radiopaque marker.

67. (Currently Amended) The catheter of Claim 65 wherein the flow redirecting surface defines a generally parabolic curve rotated about the central longitudinal axis of the first lumen.

68. (Currently Amended) The catheter of Claim 55 further comprising at least one aperture positioned in the first lumen distal from the proximal end so that the aperture may reside within the patient's vasculature ~~[[and]]~~ close to the point of insertion when the catheter is

inserted into the patient so that the aperture may maintain or enhance perfusion of blood to the patient's vasculature downstream of where the aperture resides in the vasculature when the catheter is inserted into the patient for treatment.

69. **(Previously Presented)** A method of using the catheter of Claim 55 comprising the step of directing the catheter through a patient's vasculature, thereby permitting a user to redirect blood with the redirecting tip.

70. **(New)** The catheter of Claim 55, wherein the catheter has a first width proximal of the outlet and a second width distal of the outlet, the second width being no greater than the first width.

71. **(New)** A catheter for directing the flow of blood through a patient, said catheter comprising:

a catheter body comprising a proximal end, a distal end, a first lumen extending along a central longitudinal axis between said distal end and said proximal end, the first lumen adapted to fluidly communicate with the patient, and a second lumen extending between the proximal end and an inlet port located proximal of the distal end; and

a redirecting tip positioned at the distal end, the redirecting tip comprising at least one outlet in a side of the first lumen and an internal flow redirecting surface extending from adjacent to the central longitudinal axis of the first lumen to a distal portion of the outlet, the redirecting surface having a curved profile extending through an apex, wherein the apex is not intersected by the central longitudinal axis, the redirecting surface being configured to redirect substantially all of the blood flow exiting said first lumen in a direction generally opposite of the direction of flow in the first lumen.

72. **(New)** The catheter of Claim 71, wherein the flow redirecting surface comprises a three dimensional shape defined by rotating the curved profile about the central longitudinal axis.

73. **(New)** The catheter of Claim 71, wherein the flow redirecting surface substantially prevents blood from flowing beyond the surface in the first lumen.

74. **(New)** The catheter of Claim 71, wherein the first lumen has a closed distal end.

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75. (New) The catheter of Claim 71, wherein the redirecting tip comprises a distal end having a generally parabolic profile.

76. (New) The catheter of Claim 71, further comprising a plurality of outlets in the side of the first lumen.

77. (New) The catheter of Claim 71, wherein the cross-sectional profile of the redirecting surface is substantially parabolic.

78. (New) The catheter of Claim 71, further comprising at least one aperture positioned in the first lumen distal from the proximal end, the aperture configured to reside within the patient's vasculature close to a point of insertion when the catheter is inserted into the patient, whereby the catheter is configured to maintain or enhance perfusion of blood to the patient's vasculature downstream of where the aperture resides in the vasculature when the catheter is inserted into the patient for treatment.

79. (New) The catheter of Claim 71, wherein the catheter has substantially the same width from proximal of the outlet to distal thereof.

80. (New) The catheter of Claim 79, wherein the curved profile comprises two parabolic surfaces, whereby each parabolic surface extends between a point located adjacent to the central longitudinal axis and a distal portion of the outlet.